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TO: Examiner Wai-Sing Louie, Group Art Unit 2814
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NUMBER OF PAGES TO FOLLOW:

Part 2

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Amend.

Petition for Ext (x2)

Notice of Appeal (x3)

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the hole. Accordingly, it is respectfully urged that Claim 1 patentably distinguishes over the Onishi patent and the Knight et al. patent, alone or in combination, and is therefore allowable.

With respect to Claim 3, the undersigned attorney explained to Examiner Louie that one of the features of the claim is that the corner electrodes are formed by a sol gel technique, and that the advantage of doing this is high accuracy in getting only the corner electrodes formed. The undersigned attorney further explained that the Roberts, et al. patent uses a sputter deposition, and the undersigned attorney referred Examiner Louie to Figure 3 in the Roberts, et al. patent and the disclosure at Column 6, lines 40-45 for showing this. In the Roberts, et al. device, the conductive corner fill 32 is more difficult to form using this sputter technique, as it uses the upper corner 26 of the first conductive layer 14 as the sputter deposition target. Accordingly, the corner electrodes of the claimed invention are not formed in the same manner as that disclosed in the Roberts, et al. patent.

The undersigned attorney further explained that the Knight, et al. patent does not teach forming the lower electrode by a sol gel process, and that the Knight, et al. patent only describes forming the dielectric or ferroelectric layer by a gel method. The undersigned attorney further explained that the Onishi patent does not show this feature either. Thus, it is respectfully urged that Claim 3 is not taught or suggested by the Onishi patent, the Knight, et al. patent and the Roberts, et al. patent, alone or in combination, and is therefore allowable.

With respect to Claim 4, the undersigned attorney explained to Examiner Louie that one of the features in the claim is that the thin film is formed on a surface of the lower electrode 26, and that the thin film is the same material as the lower electrode. The undersigned attorney explained to Examiner Louie that the purpose is to eliminate surface roughening on the surface of the planarized lower electrode 26 during the planarization process.

The undersigned attorney further explained that the Onishi patent does not disclose a thin film formed over the lower electrode, each being of the same material. The undersigned attorney also explained to Examiner Louie that the Zurcher, et al. patent does not show this feature either. The undersigned attorney pointed out that the Zurcher, et al. patent shows a

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device in which the adhesion layer, which is not shown, is described as being between the barrier layer 208 and under the first electrode 210. Furthermore, this adhesion layer has nothing to do with surface roughness due to the planarization process.

The undersigned attorney further pointed out that the adhesion layer, which the Examiner considers to be the thin film defined by Claim 4, is not formed of the same material as the electrode. In particular, the undersigned attorney pointed out to Examiner Louie that the barrier layer 208 is TiN or TaN, the adhesion layer is Ti or Ta, and the electrode is described at columns 7, lines 7-8 as being the same as electrode 70, which is described at column 3, lines 19-30 of the Zurcher, et al. patent. The list of possible materials used for the electrode at this section of the Zurcher, et al. patent does not appear to match the material described for either the barrier layer or the adhesion layer.

The undersigned attorney further pointed out to Examiner Louie, with respect to Claim 4, that the thin film in Claim 4 is between the lower electrode 26 and the dielectric or ferroelectric layer 28 and not under the lower electrode, and that the Zurcher, et al. patent does not meet this limitation.

Furthermore, the undersigned attorney proposed to Examiner Louie to clarify that the thin film is formed on the top surface of the lower electrode by amending Claim 4 to add the word "top" before the word "surface" to the claim so that Claim 4 would read that the thin film of the same material is formed on the top surface of the lower electrode. The amendment of Claim 4 is respectfully submitted herewith for the Examiner's consideration. The amendment is made for clarification purposes only, and no new matter has been added and no further search on the merits is required by this minor amendment. Accordingly, it is respectfully urged that Claim 4, as amended, patentably distinguishes over the Onishi patent, the Knight, et al. patent and the Zurcher, et al. patent, alone or in combination, and is therefore allowable.

With respect to Claim 5, the undersigned attorney referred Examiner Louie to Figure 7 of the pending application, and the undersigned attorney pointed out that one of the features of the claim is that the top surface of the lower electrode 26 is planarized flush with the top

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surface of the insulating film 12, and, therefore, the lower electrode 26 is entirely buried in the hole 14. The undersigned attorney explained to Examiner Louie that this shortens the etch time, because no portion of lower electrode 26 extends out of the hole and needs to be etched.

The undersigned attorney further pointed out that Examiner Louie agreed in the last Office Action that the Onishi patent does not show this feature, but he cited the Hanagasaki patent as disclosing the lower electrode as being planarized flush with the insulating film, and he refers to Figure 1E of the Hanagasaki patent for showing this feature.

The undersigned attorney told Examiner Louie that when the undersigned attorney reviewed the Hanagasaki patent, and in particular Figure 1E, the undersigned attorney concluded that Examiner Louie must have been assuming that reference numeral 8 is the lower electrode, and that reference numeral 7 refers to the insulating film. The undersigned attorney further explained that reference numeral 8 actually refers to the W plug, and the undersigned attorney referred Examiner Louie to Column 7, line 30 of the Hanagasaki patent for describing this. The undersigned attorney then pointed out that the electrode is actually reference numeral 9A and is shown in Figure 1G, and electrode 9A is actually on top of insulating film 7, and does not have a planarized top surface which is flush with the top surface of insulating film 7.

With respect to Claim 5, Examiner Louie stated that he believed the W plug is part of the electrode, but the undersigned attorney pointed out that it is separate and the electrode is described in the Hanagasaki patent as being reference number 9A, and further that the top surface of the electrode is not planarized flush with the top surface of insulating film 7. Accordingly, it is respectfully urged that the particular structure set forth in Claim 5 is not taught or suggested by the Onishi patent, the Knight et al. patent and the Hanagasaki patent, alone or in combination, and is allowable.

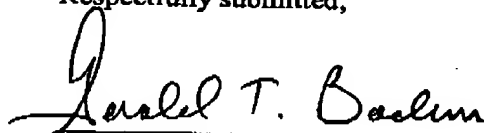
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Accordingly, it is respectfully urged that Claims 1 and 3-5 patentably distinguish over the references of record and are allowable.

A Notice of Appeal is being filed concurrently herewith. A copy of the Notice of Appeal is enclosed for the Examiner's reference.

In view of the foregoing amendments and remarks, entry of the amendment to Claim 4, reconsideration of Claims 1 and 3-5, and allowance of the application with Claims 1 and 3-5 are respectfully solicited. A Petition for a Three Month Extension of Time is submitted herewith.

Respectfully submitted,



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